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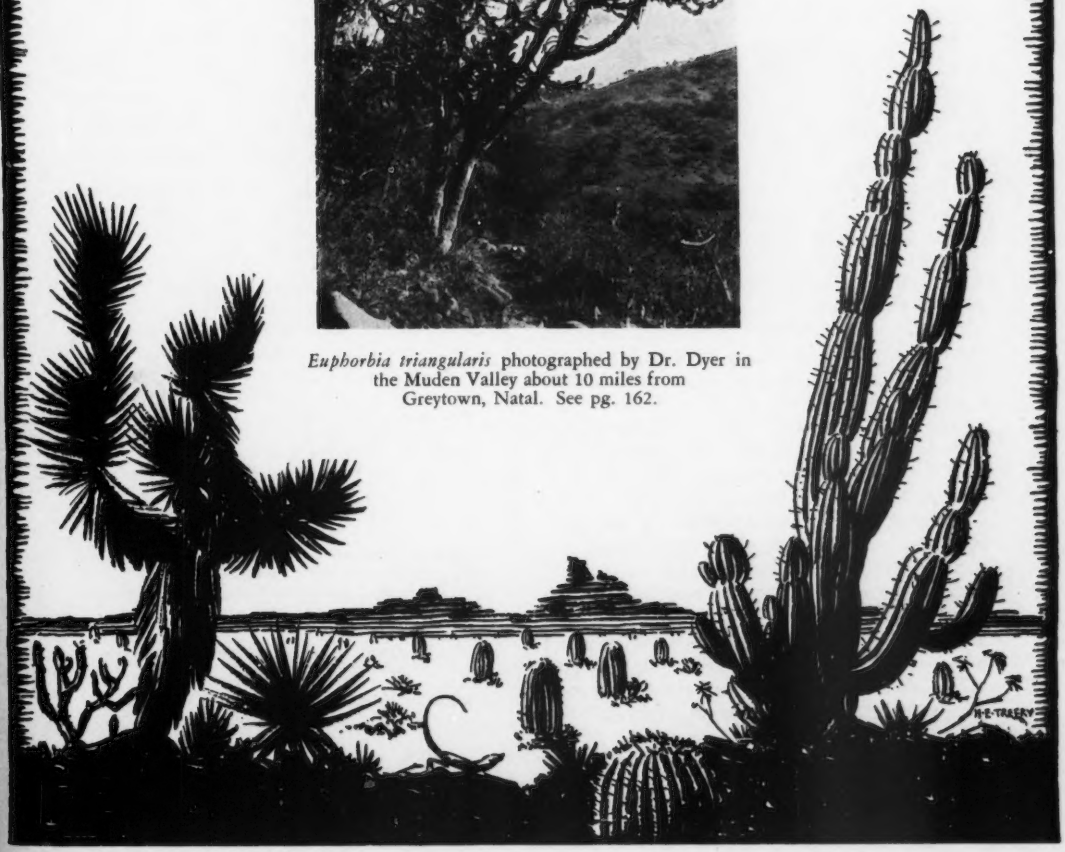
CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

Vol. IX APRIL, 1938 No. 10

Euphorbia triangularis photographed by Dr. Dyer in the Muden Valley about 10 miles from Greytown, Natal. See pg. 162.



CACTUS AND SUCCULENT JOURNAL

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EPIPHYLLUM CULTURE

The Epiphyllum, most commonly found in Central and South America, is indigenous to the Western Hemisphere. It grows in the depths of the tropic jungles on hollow tree trunks, and is a lover of the shade and humidity found there. Though all of our beautiful day-blooming Epiphyllum are, of course, hybrids, they respond to habitat conditions; so we give them the shade or semi-shade, with plenty of moisture, but also the good drainage, that their nature demands. In some instances they respond to almost the same conditions of soil and moisture as the Begonias.

We use flowerpots in the rearing of these specimens, both for protection against snails and slugs; and to force blooms. Mother Nature teaches a plant, root-bound in a pot, to put forth plenty of blooms and seeds for perpetuation. After flowering, shift to a little larger container: say from a 5 to 7-inch pot, to compel more and better blossoms next season.

For a foliage spray, the writer uses Super Destruxol; but sprays which contain whale oil or soap should not be used during budding, as they prevent the flower from opening or deform it. To get rid of the mealy bug, lift out the plant, sprinkle Vaporite inside the flowerpot, reset the plant, and water it. Repeat this process in four weeks.

The soil mixture for Epiphyllums should contain 30% leaf mold, 30% sandy loam, 20% well decomposed cow ferilizer and 20% German peat. It is well to feed the plants. In our cultivating we use a composition of nitrogen, phosphate, and potash with well rotted cow fertilizer to help hold the moisture.

The spring months, of course, are the high tide of bloom in the life of this genus. But with a careful selection of twenty-five varieties out of the most common species, one may have gorgeous blooms during every month of the year. As "surprise visitors to longing friends" this grower has been greeted with brilliant out of season colors often as a reward after anxious and expectant care. As a final admonition: it is well to order from catalog descriptions as to color and other peculiaries, rather than by scientific name alone; at least until growers more nearly agree in nomenclature. R. F. KADO.

Would you kindly publish my name and address in Journal as desiring to exchange correspondence and becoming acquainted with fanciers in my neighborhood if there are any.

MAX J. DURSTEWITZ
29 CHARLES STREET
JERSEY CITY, NEW JERSEY

A few issues ago there was an article* translated by Dr. R. W. Poindexter in regard to a controlled electric seed box. I find that by using a 40 watt lamp in a box 28 in. long, 12 in. wide, and 11 in. deep, I get an even temperature of 83 degrees of even heat and I am now going to plant seeds, as soon as they arrive from Mr. R. W. Kelly.

I hope others would report as to this in the JOURNAL because in New Jersey we can only expect to plant cacti seeds by beginning of June, not being fortunate enough to have a green house.

*"An Incubator for Cactus Seeds" by Prof. Buxbaum, Vol. VIII ,No. 7, pg. 116.

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Nursery grown for cactus bowls and window gardens. Labelled, packed and delivered with growing instructions. 12 for $1.25.
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Cereus obtusus Haworth

What Is New in Huntington Botanical Gardens

By WILLIAM HERTRICH, *Curator Huntington Botanical Gardens*

Cereus obtusus Haworth?

This most interesting, yet little known Cereus was described in 1821 by A. H. Haworth in *Revisiones Plantarum Succulentarum.* The Huntington Botanical Garden was fortunate in procuring plants of this species, in 1936, propagated from the original stock of what is known as the Rose collection housed in Washington, D. C., and held as *Cereus obtusus* under the Rose number 20081.

The description of *Cereus obtusus* Haworth in *The Cactaceae* by Britton and Rose is rather brief as both fruit and flower are "unknown." The plants have flowered rather freely with us in San Marino since their introduction and have matured fruit. It seems to be of rather slow growth, favors protection from extreme heat and likes more moisture than the average cactus. Its low, compact growth makes it a useful plant for the small garden as well as for cultivation in containers, and can thus be grown more widely than the average Cereus. In hardiness it compares favorably with other members of the genus for it withstands ten degrees of frost without serious injury.

Following is a description of a specimen under cultivation in the Huntington Botanical Garden:

Habit of growth: Low, spreading, branching from base.

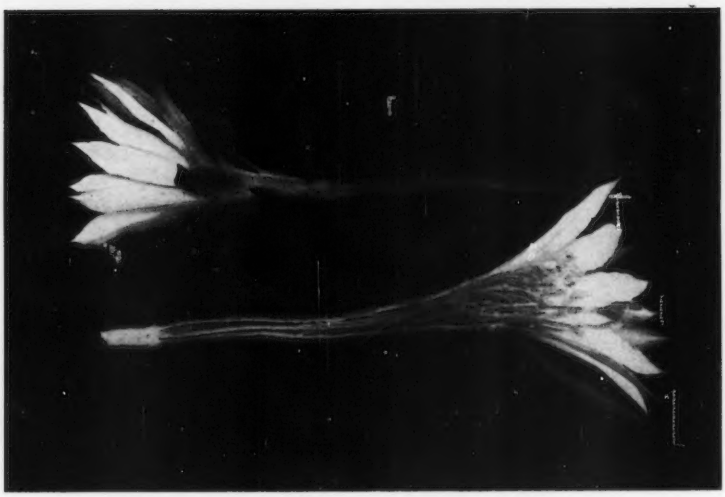
Joints: Up to 40 cm. in length. Color of new growth a glaucous green, becoming dark green when mature. Shape, generaly triangled, about 5 cm. in diameter when fully mature. Apex in young shoots, pointed, depressed in mature growth.

Ribs: Thin, 2-3 cm. in height, 1 cm. thick at ridge. Groove sharp, narrow in young growth, later becoming wider, rounded but retaining a definite groove line, one of the three grooves is always more flattened than the rest.

Areoles: Nearly round, 1 cm. in diameter. In young growth somewhat recessed in the saw-toothed edge of the ribs. About 1 cm. apart, covered with grayish white silky wool. In mature growth 2 cm. apart and nearly naked.

Spines: Radial spines needle-like, 5-7 in number, from 1-3 cm. long, lower ones the shortest. Central spines same shape, from 1-3 in number, but generally one present, up to 3-5 cm. long, dark gray.

Cereus obtusus Haworth showing closed flower and fruit.



Cereus obtusus Haworth

Flowers: Flowering season—late summer (nocturnal). Produced on mature growth, one to an areole, about 20 cm. long, funnel shaped, 10 cm. across at the widest part.

Tube: 12 cm. long, smooth, light green, with few small, pointed scales, slightly elevated; scale axils, naked.

Ovary: 2 cm. long by 11 mm. in diameter, cylindrical in shape and dark green.

Perianth segments: Outer ones about 16 in number 2-6 cm. long by 7 mm. wide above the middle, light reddish brown in color. Inner perianth segments 18 in number, 6-6½ cm. long, 12-15 cm. broad at the widest part, white, slightly fringed near the apex.

Filaments: Included. 3-4½ cm. long, attached along the sides of the tube beginning about 6 cm. above ovary. Cream colored anthers,

flat, about 2½ mm. long.

Pistil column: About 6½ cm. long, light green supporting 13 stigma lobes, 16 mm. long, extending 2 cm. beyond the anthers.

Fruit: Oblong, decidedly four-sided until nearly mature when it becomes rounded, 8 cm. long by 4-5 cm. in diameter. Green at first turning brownish and becoming a rose-red when fully mature; dehisces along the sides. Base is somewhat irregular.

Skin: 3 mm. thick, color penetrating completely. Pulp coarse, white.

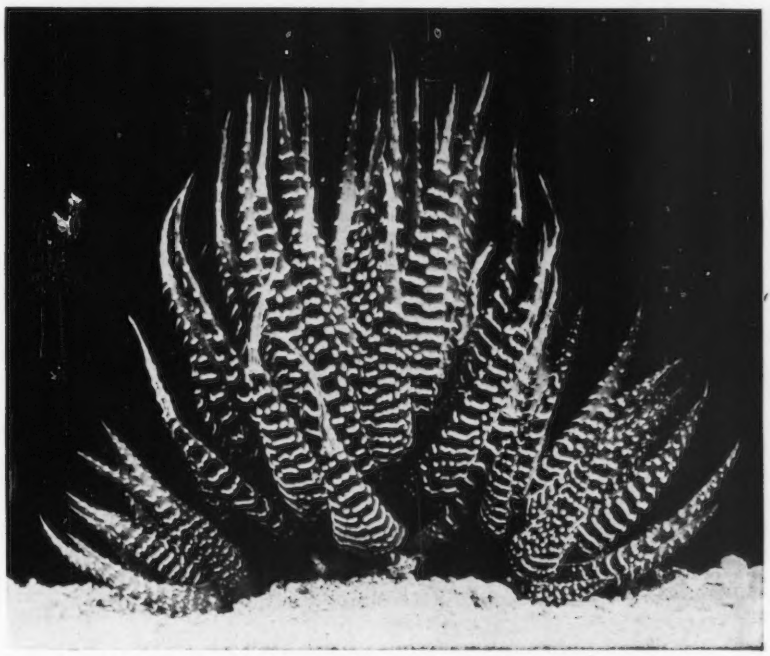
Seeds: black, 2½ mm. long by 1 mm. broad, kidney shaped.

Helium: rather large. Withering perianth persistent for a while.

NOTE: The description of this species in Britton and Rose "Cactaceae," Volume II, page 15, differs somewhat from the specimen described above, particularly in habit of growth as the illustration in the same Volume, page 17, clearly indicates.

Cereus obtusus Haworth as found in the Rose collection under Number 20081, appears to be closely related to *Cereus pernambucensis* Lemaire, but differs in color of body both in young and old growth. Furthermore the areoles are smaller, felt in areoles differs as well as the color and arrangement of spines. Flowers are larger and style is not persistent when perianth falls.

I have been unable to discover additional data regarding this species and none whatever as to its native habitat. W. H.



Haworthia fasciata, (Willd.) Haw. var. *caespitosa,* Berger nat. size.

Notes on Haworthias

By J. R. BROWN

Haworthia fasciata, (Willd.) Haw., var. **caespitosa,** Berger in Pflanzenreich IV. 38 (1908) 92. Plant very caespitose. Leaves 6-7 cm. long, 13-15 mm. broad at the base, long acuminate, bright green, the transverse rows of tubercles somewhat farther apart than in the type and less confluent near the tips, the faces roughened with small scattered tubercles and with a somewhat raised line in the middle with small white tubercles.

Locality: Type locality unknown. Described by Berger from plants growing in the gardens of La Mortola in Italy.

Berger was doubtful whether or not this plant was only a hybrid between *H. fasciata* and *H. attenuata.* It is, however, a very distinct var. of *H. fasciata.* Some three years ago, through the courtesy of the director, Dr. Domenico Lanza, a fine plant of this was obtained from the Palermo Botanic Garden and before and

since then, it has been received from South Africa under the name of *H. fasciata* and without localities. It has also been received from other widely scattered countries.

As it is the most strongly banded form of *H. fasciata* and indeed one of the most handsome and admired of all Haworthias, so it seems to be widely spread over the world wherever these plants are grown, but it is usually named *H. fasciata,* from which, however, it is very distinct.

This plant is the form of *H. fasciata* which comes closest to *Haworthia attenuata,* Haw. in general appearance, but only when grown outdoors. Peculiarly enough *Haworthia attenuata,* Haw. (and this includes its forms), is probably the only Haworthia which under artificial cultivation tends to decrease in size, so that when grown under glass side by side *H. attenuata* and *H. fasciata* var. *caespitosa* show wide divergence in characters, the latter clearly showing its close relation to *Haworthia fasciata,* (Willd.) Haw.

This plant can be grown to a fine degree of perfection under glass, as the withering of the leaf tips can thus be avoided, the heavy broad bands of white contrast beautifully with the bright green of the leaves, too much shade, however, may cause the tubercles to lose their white color, especially on the older leaves. The leaves also under these conditions are spreading-incurved and longer, to 9 cm. and the tubercles on the faces become very much smaller and less white.

Occasionally a leaf may be found with the transverse bands sharply divided down the middle, each half having its part of the white bands opposed to the intervening green parts of the other half, such a leaf may be seen to the right centre of the plant illustrated, but often it is very much more pronounced.

The illustration shows a mature plant of *H. fasciata* var. *caespitosa* grown under natural conditions, with the offset which was directly in front of the main plant removed. When thus grown the color of the older leaves is brown to brownish-green.

Since the above was written, Dr. von Poellnitz* mentions this plant as being collected at Great Brak River by Mrs. Helm.

*Repert. Sp. Nov. XLIII (1938) 97.

QUESTIONS AND ANSWERS

Question: I have always considered the spines of the Cactus to be entirely for the protection of the plant, recently there seems to be some doubt concerning this. What do you believe? S. C.

Answer: Evolution is an accepted fact by most of the students of the Cactaceae today. Years ago the recognition of species was goverened by the theory that each plant was a descendant of an especially created plant or pair of plants of the same likeness, and that all intermediates between the type specimen and others were hybrids. We now believe that each and every group of plants is going through a gradual evolution. While spines no doubt lend a form of protection to these plants, not only from animals, but from the hot rays of the sun, and thus increase their chances to be among the fittest, they also serve as a method of distributing their species. But concerning their origin I am inclined to believe with Lewis Castle, who whote in *Cactaceous Plants* regarding *Leuchtenbergia principis,* "These tubercles therefore appear to be of a compound nature, presenting the fusion of petiole and peduncle similar to what occurs in Helwingiana and Erythrochiton. Lemaire partly adopted this view regarding the mammae of the three gerena *Mammillaria, Pelecyphora* and *Leuchtenbergia* as metamorphosed leaves, the spines representing the veins of the leaves, in which opinion many careful observers agree. Le Mont and Decaisne describe them as "arrested buds," and would thus give them more the nature of branches while others incline to the view that they are simple elevations of the substance of the stem similar to the ridges in *Echinocactus* and *Cereus.* A large majority of leaves appear spiny under magnification.

Question: What is the difference between an Xerophyte and a Succulent? Mrs. R. S.

Answer: A xerophyte (pronounced zerofite) is a plant that is so formed that it may exist on a limited water supply. Therefore we would recognize a succulent as an xerophyte on account of its ability to store water for use when that necessity is lacking. But there are other conditions than the actual lack of water against which xerophytes must protect themselves, such as many trees which live a good part of the year at temperatures that makes assimilation of water impossible. An excess of salts in solution makes the water difficult for the plant to use and therefore such plants as mosses and bunch grass are classified as xerophytes. Each of these have various means of protection. In other words succulents are only a small part of the large group called xerophytes.

MRS. E. C. HUMMEL.

EDITOR'S NOTE: Mrs. Hummel has consented to answer questions in the JOURNAL. You may mail your questions direct to the Hummel Exotic Gardens, 4848 Imperial Highway, Englewood, Calif.

Echinocereus stoloniferus sp. nov. in type locality.
The two plants uprooted in the foreground show stolons.

Two New Species of Echinocereus

Approved by Neomenclature Committee of Cactus and Succulent Society of America, Inc.

By W. TAYLOR MARSHALL

Echinocereus stoloniferus sp. nov. Marshall

Planta simplex, in turmis connexa a stolonibus; 17.5 cm. altitudine, 5 cm. diametro, cineraceae-viridis; spinae radiales 10-12, setis, albae, extendentes; centrales 3-5, extendentes, rubrae juventute, albesco; spinae radiales 10-12, setis, albae, extendentes; flores fundibuliformes, flava; stigmata viridis; fructus spinosissimi.

Plant simple; in colonies, connected by stoloniferous roots just below ground level, forming clumps to 30 cm. or more in diameter; individual stems gray green, but not glaucescent, the intercostal space showing clearly through the spines. 17.5 cm. in height, 5 cm. in diameter; ribs 14-16, 6 mm. high, 12 mm. wide, very indefinitely tubercled; sap mucilaginous; areoles oval, 2 mm. by 1 mm., 5 mm. apart, filled with brownish felt when nascent; radial spines 10-12,

setose, very brittle, all lateral, spreading, young spines black or red with white base becoming white with chestnut tips, the longest 5 mm. long; centrals 3-5, one of which is distinctly central, deflexed, from lower half of areole, 2 to 4 others sub-central from upper half of areole and hardly distinguishable from radials, setose, same color as radials, 5-6 mm. long; flowers from side of stem, yellow, ovary and tube very spiny; fruit reddish, very spiny.

Type locality: Mountain facing Guirocoba Rancho, 30 miles east of Alamos, Sonora, altitude about 5000 feet.

Distribution: Observed on mountains within five miles radius of type locality.

This plant was first collected by Messrs. Radley, Bettencourt and Parsons in 1934, and was recollected by the Bristol-Marshall Expedition on March 19th, 1935.

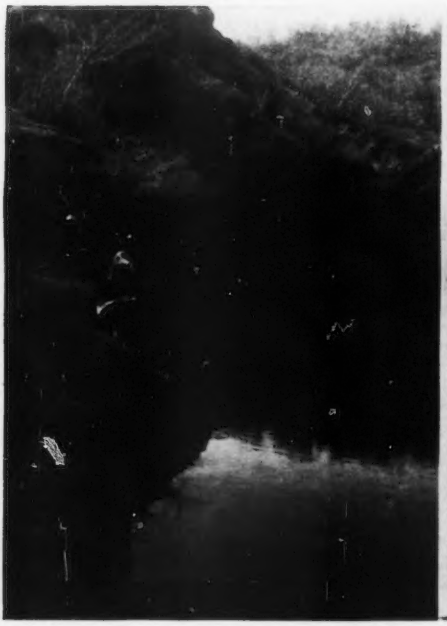
The type material has been deposited in the Dudley Herbarium of Stanford University, No. 251, 176.

This plant is in the pectinatae series in which but two yellow flowered species have been described: *E. dasyacanthus* and *E. ctenoides* and these are possibly co-specific. *E. stoloniferus* differs from *E. dasyacanthus,* and *E. ctenoides* in its much smaller, rotate flower and small fruit in contrast to the large cup-shaped flowers and large fruit of the latter species. Further marked differences are found in the bristle-like, very short, always white spines through which the plant body is clearly visible and in the habit of proliferating by stoloniferus roots, never by branching.

Echinocereus bristolii sp. nov. Marshall

Planta simplex aut caespitosa, cylindracea, 20 cm. altitudine, 3-4 cm. diametro, alboviridis; costae 15-16, tuberculatae; areolae elongatae, dense lanatae juventute; spinae centrales 3, 2 superiores divergentes, inferior deflexa, basibus albae, extremitatibus rubrae; spinae radiales 20, aciculares, albae, extendentes; ovarium spinosissimum; flores fundibuliformes, 9 cm. latitudine, purpureo-rosei; petala lanceolata, integra; fila viridia; pollenis sacci flavi; pistillum album; stigmata 11, viridis; fructus spinosissimi.

Plant simple or branching from base, or budding half way up plant, cylindric, 20 cm. long, 4-5 cm .in diameter, light green; ribs 15-16, distinctly tuberculate; areoles elongated, to 3 mm. densely lanate when young, naked in age; central spines 3, the 2 uppermost divergent, 5 mm. long, the lowest deflexed, 5 to 15 mm. long, all centrals white at base with red tips, stiff, almost subulate; radial spines about 20,



LEFT: Reservoir of the City of Soyopa, Sonora ,the type locality.
RIGHT: *Echinocereus bristolii,* sp. nov. Marshall at type locality.

The following 8 pages are the second installment of The Pronouncing Glossary.

acicular, white, spreading, the lower ones to 8 mm. long, the upper ones shorter and bristle-like; ovary 12 mm. long, 15 mm. wide, globose, areoles numerous, 3 mm. apart, bearing about 20 spines, some white, some reddish brown, slightly lanate; tube 15 mm. long, strongly ridged each ridge terminating in a small scale; outer perianth segments 20, 20-30 mm. long, 2-4 mm. wide, linear-acuminate, margin entire, violet pink; inner perianth segments about 40, 45 mm. long, 6 mm. wide, narrow lanceolate, entire, violet pink; filaments numerous (possibly over 200), 13 mm. long, pale green, included, closely massed around pistil; anthers (after dehiscing) minute, irregularly oval, yellow; pistil cylindric, 29 mm. long, white; stigma lobes 11, 7 mm. long, sometimes with spine-like appendage over 1 mm. long at extremity, divergent in funnel form, green, included; pistil about 16 mm. longer than stamens. Fruit globose, red, spiny.

Type locality: Steep banks of the reservoir of the city of Soyapa, Sonora. Altitude about 5000 feet.

Distribution: Known only from steep banks of three water holes near Soyapa, two of which are on the south side of the Yaqui River and the third on the north side.

The species is named in honor of Barkley Bristol of Nogales, Arizona, who first found the plant and who later piloted the Bristol-Marshall Expedition in 1934 when the type material was collected.

The habitat of the plant is notable in that it is found only on the steep banks of water holes from just above the water line to the top of the banks.

The type material has been deposited in the Dudley Herbarium of Stanford University, No. 251, 175.

E. bristolii comes nearest to *E. scopulorum*, *E. pectinatus* and *E. fitchii* but is easily separated by its numerous, narrow, perianth segments which have entire margins while each of the other species have much wider perianths with erose or lacerate margins.

E. bristolii has a consistant 15-16 ribs while *E. fitchii* has but 10-12; *E. pectinatus* 20 and *E. scopulorum* 13 or more.

E. bristolii has uniformly 3 heavy central spines, the upper two divergent and ascending while the lower and longer one is deflexed. *E. fitchii* has 4-6 acicular central spines; *E. pectinatus* but one short, porrect central and *E. scopulorum* 3-6 centrals which are porrect and spreading.

Reserve Space Now for the 10th Annual Show

The tenth annual Cactus Show of the Society will be held on May 13th, 14th and 15th at Rust's Nursery, Glenarm Street, Pasadena.

A large committee, under the chairmanship of Ervin Strong, is actively engaged in preparing for one of those intimate shows which bring closer friendships and increased knowledge.

A number of new features are to be introduced at this show to increase friendly association. School children will be admitted free on Saturday morning before 12, when accompanied by parents or teacher; a competent guide will explain the plants and their ecological factors.

On Saturday afternoon all of the 'Old Timers' of the Society will be especially welcomed for a reunion. Most of the founders of the Society and those who joined in the earliest days will be in evidence.

Complete details of the new features can not be given else there would be no element of surprise, but I feel that I can assure you that they will afford much added interest.

Exhibits of the complete groups from a number of foreign countries will be entered, the plants for these entries are now enroute.

The admission of 35c is very reasonable and exhibitors of even one plant may purchase season tickets at the price of one admission.

We need exhibits from every member, one plant or a complete collection. Advance booking of space would indicate a very full house so you are urged to select the plants for your entry now, and write at once to Erving Strong, 315 W. Erna Ave., La Habra, indicating the amount of bench space you will require.

At the meeting held at Exposition Park on Sunday afternoon, March 27th, a new feature was started in which questions on Cactus and Succulents were pulled from a hat by contestants and plant prizes were awarded to those who answered the questions correctly. Mace Taylor of Long Beach carried off first honors while Capt. Miller also of Long Beach was a close second.

The drive for increased membership is lagging somewhat and renewed efforts are called for if we are to have those color plates in the JOURNAL. Let us each resolve to secure one new member in April and another in May. It can be done with a little effort as there are many interested collectors who would gladly join if asked.

A succulent exhibit at the recent Pasadena Flower Show won a first prize ribbon for the Society and made many new friends.

W. TAYLOR MARSHALL.

Euphorbia triangularis and *E. Tirucalli,* Muden Valley. The densely covered valley included three other species. Note the comparative size of the native in center foreground.

Botanical Exploration in South Africa

Part VI

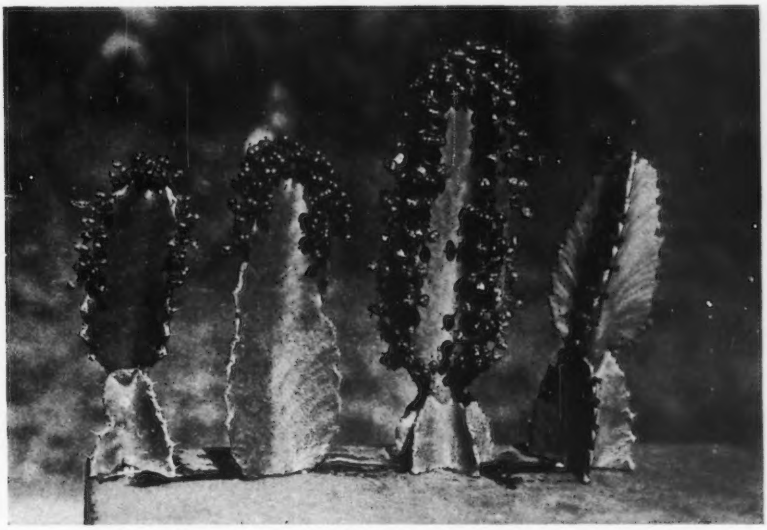
By DR. R. A. DYER

During the week-end in Durban, the beautiful seaport town of Natal, a visit was paid to Isipingo Beach, a few miles further south. Here, overlooking the sea, in the sand-dune bush, one finds excellent specimens of *Aloe Thraskii,* a handsome species attaining a height of several feet.

And now for the return journey from Durban to Johannesburg and Pretoria. There is little of interest to the succulent enthusiast who motors from Durban to Pietermaritzburg unless he also appreciates grand scenery. One gets a magnificent view of the "Valley of the Thousand Hills." The few rare succulents these hills harbour, such as *Euphorbia Franksiae* N. E. Br., are not seen. Many botanists have travelled along this road, yet it was left to Mr. Reynolds to discover an undescribed Aloe in scrub bush not many miles from Pietermaritzburg. The Aloe was described with illustrations under the name *A. pruinosa* in *South African Journal of Botany,* July, 1936. It is a member of the "maculate" group allied to *A. Greenii Baker* and *A. Dyeri* Schonl. (named in honor of Sir William-Thiselton-Dyer). The leaves of *Aloe pruinosa* are generously whitish-spotted on the upper and lower surface and the inflorescence is often over 6 ft. in height. Mr. Reynolds points out that a striking feature of the species, from which the name is derived, is a greyish powdery substance on the racemes which gives them a dull appearance.

We deviated from the main road at Pietermaritzburg, selecting to go via Greytown into the Muden Valley in which succulents constitute the dominant vegetation. Certain hillsides along the way were beautified by the blooms of *Aloe saponaria,* a species widely distributed in South Africa and one which exhibits considerable variation in the characters of both leaf and inflorescence.

In writing about the succulent flora of the Muden Valley one is faced with several difficult problems of taxonomy. Should forms in this valley be considered merely as "forms," or distinct species of their close relatives elsewhere in South Africa? The first succulent to catch the eye on the road from Greytown to Muden Valley

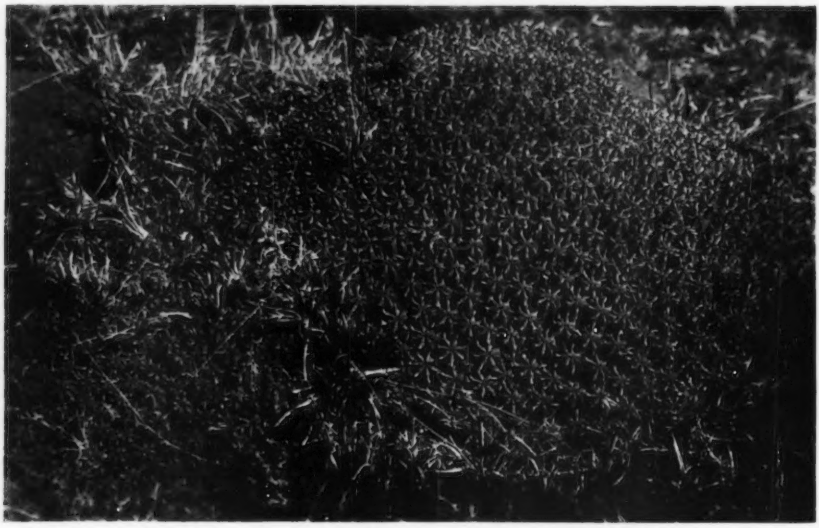


Range of forms of *Euphorbia triangularis* taken from two adjacent trees.

is a tree Euphorbia. It has the general growth form of the eastern Cape Province species *E. triangularis*. The branches of the Muden Valley form has 3 to 5 angles, the margins of which usually possess a continuous horny margin; the eastern Cape form rarely has 5 angles nor is the continuous horny margin a common feature. Floral and fruiting characters appear to be very similar and it seems to me that during the colonization of different areas by the parental stock, local variations have arisen, which, in the course of time, have become more or less stabilized.

The same sort of variation occurs in *Euphorbia pulvinata* Marl., a form of which we discovered near the foot of the first slope. *E. pulvinata,* which derives its name from the cushion-like shape of adult plants, is more accustomed to a moister and more elevated habitat. In such areas

Euphorbia pulvinata in Muden Valley.



Euphorbia pulvinata, common in a small area in Muden Valley.

the angles are more prominent and the leaves far longer than on the Muden Valley form. Photographs of the Muden Valley forms of both *Euphorbia triangularis* and *E. pulvinata* accompany this article. Perhaps the most appropriate word to apply to the photograph of the terminal sections of four branches from two adjacent trees of *E. triangularis* is "enlightening," for such variation would seem improbable in a species if one did not have it on reliable authority. It is further proof, if it is needed, that a full knowledge of plants is gained best in the field.

Parts of the Muden Valley are covered by almost impenetrable thickets of *Euphorbia* species, among which *E. Tirucalli* L. is the commonest. *E. Tirucalli* is far more nondescript to look at than the "angular" species. Probably all readers know that it is a shrub or small tree with round, unarmed branches. The ultimate branchlets are pencil-like and are very readily detached from the main branches at the junction. It was one of the first species to be exploited in South Africa for the rubber content of the latex. I have no recent data on this subject though.

My time was so fully occupied in studying the species of *Euphorbia* that I had little opportunity of looking at anything else. There were several difficult problems presented by the Aloes which engaged Mr. Reynold's attention. Meanwhile Miss Verdoorn discovered some small Stapelias under the protection of bushes. One proved to be *Huernia hystrix* and another a species of *Ceropegia.* Although the genus *Ceropegia,* which is distantly related to *Stapelia,* contains only a few succulent forms such as *C. stapeliiformis,* it makes a very absorbing subject for cultivation and study. The variety of shapes in the flowers is quite as remarkable as that recorded among the Stapelieae. Several interesting species of *Ceropegia* are recorded from the Muden Valley including the novelty *C. plicata* E. A. Bruce, collected by Mr. Cronwright, and recently described in *South African Flowering Plants* under plate 675.

To commemorate our trip through the Muden Valley, Mr. Reynolds named a previously undescribed species found there as *A. mudenensis* This "maculate" was described with illustrations in S. A. Journ. Bot. Jan., 1937. In discussing its characteristics Mr. Reynolds pointed out that the species varies considerably in leaf; "usually the leaves are rather attenuate and of a peculiar bluish-green color with a characteristic lineation on the lower surface, while in spotting, the lower surface varies from lineate and immaculate to obscurely or distinctly spotted. "Similarly variations are recorded in nearly all other characters." The species does not sucker freely nor form dense groups, but is usually found in small groups of 3 to 6 plants, although solitary plants with long stems are also met with."

In this valley occurs also the *Aloe* which Berger wrongly identified as *A. ferox* Mill. in his revision of the genus in *Das Pflanzenreich.* This and some further *Euphorbia* problems will be dealt with in a concluding article on this trip.

Notes on the Genus Echeveria

By ERIC WALTHER, Botanist, Golden Gate Park

PART 4

Echeveria grisea sp. nov.

Caudice simplice, foliis laxe rosulatis, 10-15 cm. longis, obovato-spathulatis, griseis, brevissime mucronatis, panicula elongata, ad 50 cm. alta, bracteis crassis, ad 5 cm. longis, foliis concoloribus, ramis 3-5, brevibus, parvifloris, pedicellis 4-5 mm. longis, sepalis crassis, teretibus, obtusis, corollis 13 mm. longis, carneis, glaucopruinatis, petalis erectis.

Plant with evident, usually short and simple caudex 2-3 cm. thick; leaves few, laxly-rosulate, 10-15 cm. long, 5-8 cm. broad, broadly-obovate-spatulate, rounded at apex, minutely mucronate, long-attenuate to base, often conspicuously-undulate at edges, color corydalis-green to asphodel-green, sometimes spotted deep-purplish-vinaceous, pruinose, petiole 2 cm. wide or less, blade concave above and upcurved; inflorescence paniculate, to 50 cm. tall or more, scape stout, strict, lower bracts numerous, ascending, to 5 cm. long, 2 cm. broad, oblong-obovate, thick, subterete at base, colored as the leaves; panicle narrow, its branches 3-5, rather short, angularly divaricate; pedicels stout, 4-5 mm. long; sepals turgid, terete, obtusish, longest 7 mm. long, color light-celandine-green; corolla 13 mm. long, 9 mm. thick at base, 6 mm. in diameter at mouth, occasionally 6-merous; petals fairly thick, nearly straight, shrimp-pink outside at base, at edges and tips strawberry-pink, inside pale-seashell-pink; stamens 7 mm. long; carpels 9 mm. long, white; styles victoria-lake to carmine; nectaries truncate, narrowly-lunate-reniform, to 2.5 mm. broad. Flowers in December and January.

Type: Calif. Academy of Sciences No. 251051 (E. Walther, 1935, No. 1.)

Locality: Canon de la Mano near Iguala, Guerrero.

Distribution: Possibly extending to Uruapan in Michoacan.

Exsiccata: Holway & Rose 03/689, Iguala (referred to *E. campanulata* by von Poellnitz); Pringle 05/10129 (US, MBG, FM, MC, UC, PA) from Uruapan, on lavafields, in shade at 5,000 ft., may belong here, the branches of its inflorescence are often reduced to a solitary flower.

Remarks: The present material was referred to *E. campanulata* by von Poellnitz, in his "Zur Kenntnis der Gattung Echeveria," Fedde, Rep. 39:256, 1936. *E. campanulata* is a rather imperfectly known species, but the original description calls for "leaves tongue-shaped, with broadly rose-tinged margins, petals at apex shortly acuminate and spreading," characters scarcely to be seen in living plants now before us. We grow another plant agreeing much better with both the original description of *E. campanulata* and the Plate, No. 1247, in Lindley's Botanical Register, so that we feel fully justified in describing this plant as another species.

The present species appears sufficiently distinct from the various members of our Series

Echeveria grisea sp. nov.
4a. Sideview of single flower, app. x 1.
b. Base of calyx, x 1.
c. Inside of petal, x 1.
e. Carpels, x 1.
f. and g. Nectary, x 4.
h. Leaf, x 0.2
i. Lower bract, x 0.2

Gibbiflorae in its ash-colored leaves, the thick bracts and sepals, short, straight corolla, etc. From *E. fulgens* and its allies *E. grisea* also differs in the points just mentioned, as well as in its taller, often many-branched scape. Until we are able to obtain living specimens of the Uruapan-plant, its exact position must remain in doubt.

Our living plants were collected at the locality cited in 1935, on the occasion of our second field-trip to Mexico. The opportunity to visit this Canon we owe the courteous cooperation of Mr. and Mrs. C. Halbinger, who furnished both guidance and transportation. The Canon is a

well-known collecting-ground for various botanists, having been frequently visited by both C. G. Pringle and Dr. Rose. It is the type-locality of *Thompsonella platyphylla,* which prefers the hotter, sunnier south-facing cliffs, while our *Echeveria* seeks the greater moisture in the deep shade of the north-facing cliffs. These cliffs are of marble and harbor an interesting vegetation, among which we may mention a species *Achimenes,* the unique *Begonia unifolia* of Dr. Rose's, etc. The elevation here is rather low, about 2400 feet, which accounts for the tropical element in the flora of the Canon. The latter is utilized by the railroad to Balsas as a lowlevel route, seemingly also serving to drain a large part of the State of Morelos, much of which seems to have been at one time a large inland lake, finding its sole outlet through this Canon.

Echeveria grisea sp. nov.
UPPER LEFT: Flowering branch, app. x 1.5
UPPER RIGHT: Flowering plant, app. x 0.15
LOWER LEFT: Canon de la Mano, with Senora Halbinger.
LOWER RIGHT: Foliage-rosette, app. x 0.4

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MY TEN FAVORITE SUCCULENTS

Part III

By MRS. NEFF K. BAKKERS

I am beginning to know how the judges of bathing beauties must feel when they have to make a final choice. I'll wager they couldn't do it without sneaking away from the subjects. I shouldn't dare make my selection while among the other reproachful and lovely faces in the garden as each has a beauty of its own which would confuse my judgment.

Of course, nobody who attempted to have even a small collection would think of being without a few kinds of Haworthias. There are a couple of hundred kinds I haven't seen, but I'm going to see them before long. That is my next objective. Of those I have seen it is difficult to make a choice because they are so varying in style and each one beautiful.

Although the flowers are modest there is probably no genus of plants which has more uniform perfection of form and design in the plant itself. I can remember the ecstasy with which I viewed each new species for the first time. I am more than pleased that that fine and careful author, our honored member, Mr. J. R. Brown, is casting some light on the subject for us in our nice JOURNAL.

The Haworthias are slow growers—almost painfully slow—and have to be several years old before they have offsets. The common kinds are good moneymakers because there is a heavy demand in the New York market, but it takes years to get a good breeding stock.

They rank high as house plants because they do not lose their color or shape. They are well behaved children. They are not apt to turn up with bugs or other unpleasantnesses to harass their nurses and I do not know one variety that does not have a protective texture that says hands off to vermin.

An aristocratic genus it is in the best sense of the word; closely related to the Aloes and Gasterias, all belonging to the lily family and at one time were called "Aloes" before sharper botanical distinctions were made between them.

Even when neglected, they never look ragged or unkept. They never go sprawling around into forbidden places. Correct and flawless, they do not acquire bad habits by evil association. They keep their noses clean and their pinafores unrumpled even though forced to live in an alley.

Some of them, like *H. maughii* and *H. truncata*, are so rare that only a few exist in the United States. Both of them look as though they

had been cut straight o ffacross the top. They are unique and interesting, but too unattainable, at present, to let ones desires reach out to them. Those who hitch their wagons to the stars may be beloved by originators of maxims, but they are not very happy.

Among those that are within the reach of us all , perhaps I like *H. margaretifera* var. *semi glabrata* the best, but I'd like to choke the soulless botanist who named it. A full grown plant is remarkably beautiful. It is covered with heavy white pearls that grow more prominent with maturity. Set on a rich dark green background they gleam like real pearls on the neck of a dusky beauty, and I know pearls were made for tawny queens only.

A close second is *Haworthia granata* which has heavy white bands, striking, but a little too lavish, a little overdone. The true *H. fasciata* is better in that respect because its lines are not so close. But alas, it has them on the under side of the leaves only and as they have a tendency to turn back their real beauty is not visible unless the plant is above the leve lof the eye. A full grown plant of any Haworthia is beautiful enough to be worthy of its place in garden or home and a collection of fifty kinds would be something about which to dream.

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